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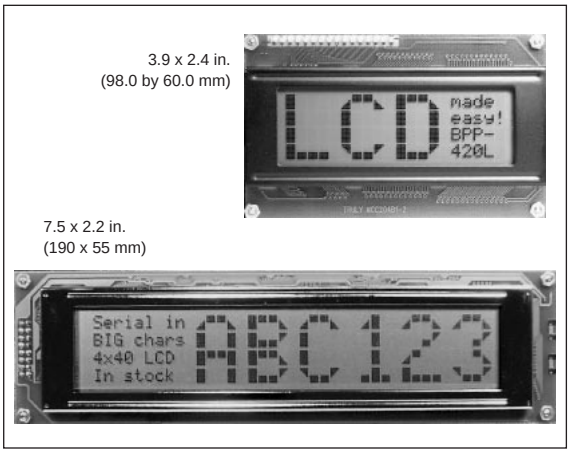
Jameco Part Number 136485

Data Sheet
BPP4XX • v1.2 • 01/99

4-line Serial LCDs with Terminal Features, Big-Character Mode



Supertiwst 4x20 and 4x40 alphanumeric LCDs with a serial interface (up to 9600 bps) for 1-wire interfacing to computers and controllers. Both with LED backlighting.

Easy-to-use Data Displays

The BPP-420 and -440 work like a simple serial-receive terminals. They display text in a 4-line format on a high-contrast, supertwist LCD module. They understand common control characters like carriage returns, linefeeds, tabs, backspace, etc. Special characters allow cursor positioning, backlight control, and the unique “big-character” mode shown above. The displays will even drive a (customer-provided) piezo buzzer for audio alerts.

Interfacing is easy—just connect +5V, ground, and serial data (RS-232 or inverted TTL level, no parity, 8 data bits, 1 stop bit). The 4x20 display supports data rates of 2400 and 9600 bps; the 4x40 accepts 1200, 2400, 4800, and 9600 bps. Data rates are set by configuration switches.

You already know how to program for these displays, since they understand a sensible subset of the ASCII control characters. The manuals include program examples for the BASIC Stamps® I and II, plus PC BASIC.

Compatibility and New Features

The BPP-420 and BPP-440 use identical sets of control characters, making the transition from one display to another a snap. They’re also compatible with the text-mode instructions for our graphics displays. And the BPP-420 can emulate our simpler LCD Serial Backpack® interface for compatibility with our older 4x20 displays.

New features in the current release (rev 3.0 or higher) of these products include big-alpha capability (letters A—Z added to large-character mode), a right-alignment instruction for easy data-field formatting, and a larger serial buffer.

Ordering Information

4x20 Serial LCD Module with LED backlight (BPP-420L) 79.00

Mounting kit for 4x20 with faceplate, hardware (BEZ-420) 12.00

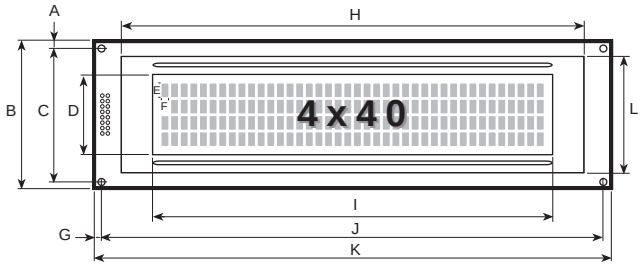
4x40 Serial LCD Module with LED backlight (BPP-440L) 159.00

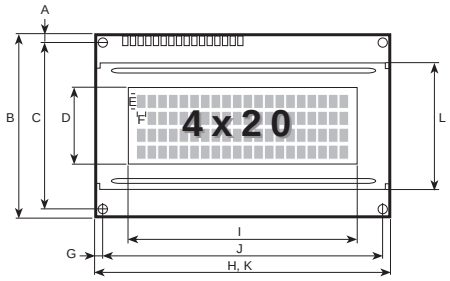
Quick-Start for PC users (5V power supply, 9-pin serial adapter, disk; BPX-QUIK) 29.00

Figure 1. Dimensional data

We use 4x20 and 4x40 LCD modules from three manufacturers: Powertip (PT), Truly, and DataVision (DV). The table below summarizes the major dimensions of each combination of display and manufacturer that we carry.

		4x40		4x20	
		PT	DV	Truly	PT
A	y offset pcb edge to hole ctr	3.50	3.50	2.50	2.50
B	y pcb height	54.00	54.00	60.00	60.00
C	y hole spacing	47.00	47.00	55.00	55.00
D	y screen opening	29.50	29.50	25.20	25.20
E	y character size	4.89	4.89	4.75	4.75
F	x character size	2.78	3.53	2.95	2.95
G	x offset pcb edge to hole ctr	3.50	3.50	2.50	2.50
H	x screen frame	166.30	170.00	98.00	98.00
I	x screen opening	147.00	147.00	76.00	76.00
J	x hole spacing	183.00	183.00	93.00	93.00
K	x pcb width	190.00	190.00	98.00	98.00
L	y frame height	41.20	42.70	38.40	42.00
-	mounting hole diameter	3.50	3.50	2.50	2.50
-	frame depth, LED-backlit	9.10	9.50	8.50	9.40





- All dimensions in mm.
- Worst-case tolerance is ±0.50mm.
- Maximum depth (from front of screen frame to tips of interface header posts) is 26mm.
- NOTE: Dimensions subject to change. Critical applications should be based on *actual measurements.*

Optional Faceplate (BEZ-420, 4x20 only)

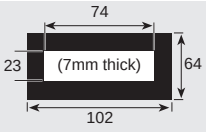


Table 1. Basic specifications

Power requirements (BL off).....4.8 to 5.5 Vdc @ 10mA
Power requirements (BL on).....4.8 to 5.5 Vdc @ 100mA
User connector .....5-pin header; 0.025" posts on 0.10" centers
Connector pinout.....+5 GND SER GND +5
Serial input.....RS-232, or inverted TTL/CMOS, 9600 or 2400, N81
Buzzer output .....5V @ 25mA max; pulses approx. 100ms for BELL
Operating temperature.....0° to 50°C (32° to 122°F)
Serial data rates (4x20) .....2400 or 9600 bps
Serial data rates (4x40) .....1200, 2400, 4800, or 9600 bps

Table 2. Control characters by function

**These entries match like-named keys on standard keyboard (backspace, tab, return)*

Cursor home .....ctrl-A
Begin big-character mode.....ctrl-B
Hide cursor .....ctrl-D
Show underline cursor .....ctrl-E
Show blinking-block cursor .....ctrl-F
Bell (pulse piezo-buzzer output).....ctrl-G
Backspace*.....ctrl-H
Horizontal tab (cursor to next multiple-of-4 column)* .....ctrl-I
Smart linefeed (cursor down one line).....ctrl-J
Vertical tab (cursor up one line) .....ctrl-K
Formfeed (clear screen) .....ctrl-L
Carriage return*.....ctrl-M
Backlight on .....ctrl-N
Backlight off.....ctrl-O
Accept cursor-position entry .....ctrl-P
Clear column .....ctrl-Q
Accept right-alignment data.....ctrl-R

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